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| 10/627,977 | 07/28/2003 | Andrzej Wozniak | T2147-908626 | 4096 |

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| EXAMINER | |
|---|---|
| SILVER, DAVID | |
| **ART UNIT** | **PAPER NUMBER** |
| 2128 | |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|---|---|---|
| 3 MONTHS | 03/08/2007 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/627,977 | WOZNIAK, ANDRZEJ | |
| | Examiner | Art Unit | |
| | David Silver | 2128 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *07 December 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *83-129* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *83-129* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 December 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

1. Claims 36-82 were originally presented for examination.

2. Claims 36-82 were rejected.

3. Claims 36-82 were cancelled and therefore withdrawn from consideration.

4. Claims 83-129 are currently pending in Instant Application.

5. The Instant Application is not currently in condition for allowance.

### ***Priority***

1. Claimed priority has been acknowledged in previous Office Action (7/30/02).

### ***Information Disclosure Statement***

6. The information disclosure statement(s) (IDS) submitted on 12/15/03 is/are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement(s) is/are being considered if initialed and signed by the Examiner.

### ***Response to Arguments***

7. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection as necessitated by amendment.

### ***Claim Objections***

8. Claims 121-122 is objected-to because:

8.1 Claim 121: contains a period (.) within the claim following the phrase "includes a".

8.2 Claim 122: fails to further limit parent claim.

### ***Claim Interpretation***

9. Limitations drawn to allowing, enabling or making optional a function's performance does not further limit a claim. As such, any prior art not explicitly prohibiting the performance of the function inherently anticipates the limitation.

10. Claims 103 and 105 is/are not invoking 35 U.S.C. 112 sixth paragraph for the below emphasized reason:

**MPEP 2181 Identifying a 35 U.S.C. - 2100 Patentability recites:**
A claim limitation will be interpreted to invoke 35 U.S.C. 112, sixth paragraph, if it meets the following 3-prong analysis:

(A) the claim limitations must use the phrase "means for" or "step for;"
(B) the "means for" or "step for" must be modified by functional language; and
(C) the phrase "means for" or "step for" must not be modified by sufficient structure, material or acts for achieving the specified function.

As per exemplary claim 103, the phrase "said components by means of regular expression" (emphasis added). It is unclear whether the Applicants intended to invoke 35 USC 112 sixth paragraph. This claim fails to meet prong (A) therefore not considered to invoke the sixth paragraph.

As per claim 105, in view of MPEP 2181 (prong (C)), although the claims recite "means for" it is determined that the details following the "for" refers to intended use and does not invoke 35 USC 112 sixth paragraph. Specifically, when a 'means for' is further limited by another 'means for' it is deemed to provide sufficient structure for achieving the specified function.

The above claims are merely exemplary.

## ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:
Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

11. Claims 83-129 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

11.1 In this instance, there is no explicit and deliberate definition in the specification that the product includes an appropriate medium or hardware elements, the claims are directed to software, *per se*. Note exemplary claim 1 which recites only software elements. Additionally, software, *per se*, is not considered concrete (MPEP 2106).

11.2 Furthermore, it is evident from the Specification, paragraph [0009] that the Configurator is a software program, per se. "To this end, the invention primarily concerns a method of automatic generation, by means of a data processing system associated with a program called a Configurator for creating a global simulation model". Therefore limitations of claim 105, which recite that a software element, Configurator comprises 'means for' structure are not in accordance with the Specification. Specifically, a software cannot comprise hardware.

**MPEP 2106 recites, in part:**
"...USPTO personnel shall review the claim to determine it produces a useful, tangible, and concrete result. In making this determination, the focus is not on whether the steps taken to achieve a particular result are useful, tangible, and concrete, but rather on whether the *final* result achieved by the claimed invention is "useful, tangible, and concrete."

11.3 The method claims do not produce a useful, tangible, and concrete final result. The steps of the method claims do not produce a useful, tangible, and concrete result. They merely recite a software algorithm, per se, which, for example, does not display, store, or otherwise provide a useful tangible output. Note exemplary claim 83 which only recites software steps and does not produce a useful tangible and concrete final result. See MPEP 2106 [R-5] (partially recited above).

## ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 83-129 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the **enablement requirement**. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As per claim 83-129, the following questions are merely exemplary of the plethora of 112 enablement deficiencies: what is a "Configurator"? What is a "global model"? What is a "connection coherency rule table"? What is an "environment component"? What is a "global simulation mode" and how does it differ from "global model"? What are "Global Blocks"? What is an "instance connection table"? What are the "position". Specifically, a coordinate system has not been established. Also note, for example, the Configurator (disclosed in the Annex), particularly page 45 which recites, ""MONITOR" => { "RegModule" => { "fbus_p" => "fbus_port.v" },". The fbus_port.v file, which appears to be the actual file model of the MONITOR has not been provided. The Configurator references a number of external files which are essential but does not adequately disclose the content in order to enable one of ordinary skill in the art to

make and use the invention without undue experimentation.

How are the regular expressions "applied"? Specifically, a regular expression is a pattern constructed according to the defined rules (IEEE Dictionary). The limitation is an equivalent to stating "simulating with mathematic formula" while providing no support for how such simulation is performed or defining the mathematic formulae. What are HDL-type and HLL-type files? How is the method "accomplished" in accordance with the "Configurator"? How are elements "mutually connected"?

13. Claims 83-129 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the **written description requirement**. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As per claims 83-129, the instant claims are rejected for failing to comply with the written description requirement because the subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, note the 35 USC § 112 enablement rejections applied above. The instant claims are rejected for failing to comply with the written description requirement for at least the items enumerated above. The deficiencies above are merely exemplary.

14. Claims 83-129 are rejected under 35 U.S.C. 112, second paragraph, as being **indefinite** for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The following terms fail to set the metes and bounds; thus, rendering the claims indefinite:

Claim 83, 105, 119, "various component types", "all the possible configurations", "information related to all possible configurations", "optional additional indications", "the server", "the level".

Claim 105, "the parameters", "the connection roles".

Claim 83, "unambiguously identifies its position". Specifically, a coordinate system has not been established.

Claim 105, "mutually connected". Specifically, does this mean that each component is directly connected to each other?

The terms HLL, high level language, are relative terms which render the claims indefinite. Specifically, what qualifies as a "high level" language. Application fails to set the meets and bounds for this term.

15. Claims not specifically mentioned are rejected by virtue of their dependency.

**16. The above explanations are merely exemplary and non-exhaustive.**

**17. The Applicants are required to thoroughly review the claims and to fix all other similar occurrences of the above-cited deficiencies.**

***Claim Rejection - Claims not searched or treated on merits with respect to prior-art***

> **MPEP 2173.06 Prior Art Rejection of Claim Rejected as Indefinite recites:**
> As stated in In re Steele, 305 F.2d 859, 134 USPQ 292 (CCPA 1962), a rejection under 35 U.S.C. 103 should not be based on considerable speculation about the meaning of terms employed in a claim or assumptions that must be made as to the scope of the claims.

18. Claims 83-104 have not been treated on merits because the claims are replete with claim formulation and 35 USC 112 errors. As such, it is difficult to ascertain the metes and bounds of the invention the Applicants regards as their own. Therefore, claims 83-104 have not been treated on merits.

The above-cited 35 USC 101 rejections, 35 USC 112 rejections, claim objections and specification objections are merely exemplary. The Applicants are required to fix all other occurrences of similar deficiencies.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

19. Claims 119-129 are rejected under 35 U.S.C. 102(b) as being anticipated by Lazansky **(US 5,111,413)**.

Lazansky discloses: 119. (new) A method for automatically generating a global simulation model of an architecture comprising models of integrated circuits under development, comprising:

reading an architecture description file of the global simulation model containing information related to all possible configurations of said architecture **(col: 5 line: 20-36; col: 16 line: 10-15)**;

storing said information related to all possible configurations **(col: 2 line: 60 to col: 3 line: 11; col: 5 line: 27-36; col: 13 line: 39-50)**;

instantiating one or more components and storing corresponding information in an instance connection table **(col: 11 line: 50-60; col: 18 line: 49-52)**;

topologically connecting a plurality of interface signals, wiring the plurality of interface signals at the level of each instance of the one or more components using a component and connection rule table; storing information corresponding said wiring in a wiring table **(abstract; col: 24 line: 56-65; col: 3 line: 1-11)**; and

generating one or more HDL-type source file and one or more HLL-type source file of the global simulation model, each said HDL-type source file and each said HLL-type source file corresponding to the configuration specified by the configuration definition file **(col: 7 line: 1-20; col: 16 line: 13-15; col: 21 line: 11-25; col: 4 line: 42-61; col: 13 line: 16-23)**.

Lazansky discloses: 120. (new) A method according to claim 119, further comprising transmitting to the HLL-type source file parts of each component including: a name of the component; a type of the instance; and an HDL path comprising a hierarchical name of the component in the description of the model **(Fig 3a-i and description)**.

Lazansky discloses: 124. (new) A method according to claim 119, wherein the architecture description file of the global model includes simulation models of Global Blocks and System Blocks, said Global Blocks and System Blocks being connected to one another and adapted for handling environment signals **(col: 5 line: 20-36 emphasis on lines 35-36; col: 22 line: 24-49; col: 23 line: 1-11)**.

Lazansky discloses: 125. (new) A method according to claim 124, wherein the System Blocks are connected to other components and supply said other components with system signals that are specific to said other components **(col: 5 line: 20-36 emphasis on lines 35-36; col: 22 line: 24-49; col: 23 line: 1-11)**.

Lazansky discloses: 126. (new) A method according to claim. 125, wherein the data processing system is configured to perform a conformity check of the connections by comparing the connection table of real

instances between blocks to the connection coherency rule table **(Fig 5 and description; col: 12 line: 55-67)**.

Lazansky discloses: 127. (new) A method according claim 126, wherein the Configurator system generates the source files in HDL language and in HLL language, in a source me generation phase, based on the content of the component and connection rule table, the coherency rule table, the source file formatting table, the instance connection table and the wiring table **(col: 7 line: 1-20; col: 16 line: 13-15; col: 21 line: 11-25; col: 4 line: 42-61; col: 13 line: 16-23; abstract; col: 24 line: 56-65; col: 3 line: 1-11)**.

Lazansky discloses: 128. (new) A method according to claim 127, wherein the data processing system is configured to generate, using the Configurator system, for each of a plurality of configuration variants, a plurality of simulation models, each of said plurality of simulation models corresponding to a same functional specification, but written in a description comprising one or more combinations of languages of different levels **(abstract; column 2-3; col 7)**.

Lazansky discloses: 129. (new) A method according to claim 128, wherein the data processing system is configured to generate a functional specification of the global simulation model in a computer format that is compatible with a high-level programming language and a format compatible with a hardware description language **(abstract; column 2-3; col 7)**.

## ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

- This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

20. Claims 121-123 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lazansky **(US**

**5,111,413)** as applied to claim 119 above, and further in view of Official Notice taken.

As per claim 121-123, Lazansky fully discloses all limitations of the parent claims. Lazansky however does not disclose using distributed simulation in order to simulate the circuit and that the system includes a. keyword indicating the name or number of the server in which one of said components is instantiated when the method is used in a multi-server system; dividing a Configuration into a plurality of HDL-type components and a plurality of HLL-type objects; sorting the plurality of HDL-type components and the plurality of HLL objects according to the servers to which they belong; generating one or more HDL-type peripheral components used for sending and receiving signals between the parts of the configuration; and duplicating the Global Blocks, the instantiation of the Global Blocks being duplicated in each server; and generating the plurality of HLL objects to serve as a communication medium between the servers. Official Notice is taken with respect to these limitations. It would have been obvious to one of ordinary skill in the art <computer engineering / VLSI> at the time of Applicant's invention to combine the features in order to use multiple server in order to take advantage of multiple processors executing in parallel thereby resulting in faster simulation results. See for example, US 7020722 B2, US 20030093569 A1, US 20030093257 A1,

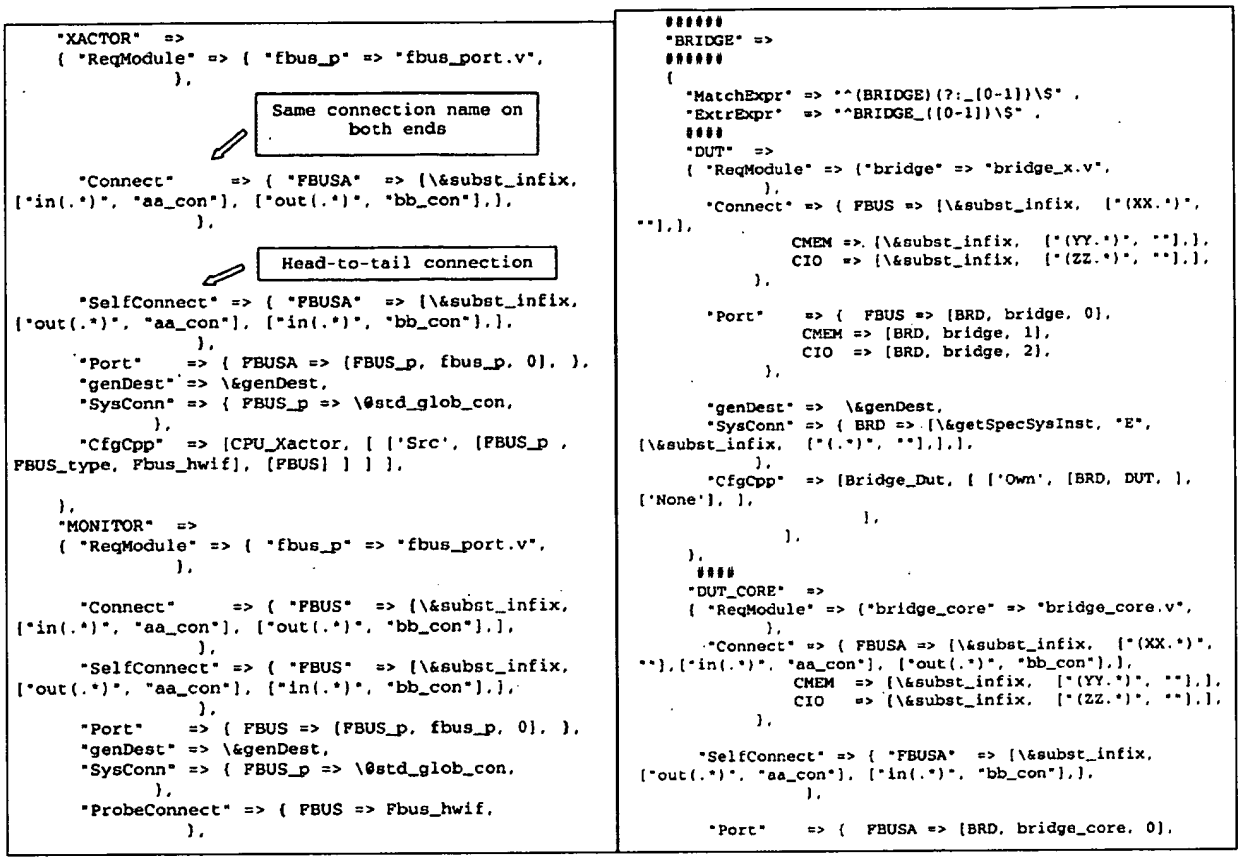
US 20030093256 A1, US 20030093255 A1, US 20030093254 A1, US 20030093253 A1, US 20030093252 A1.

## ***Allowable Subject Matter***

21. Claims 105-118 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 101, 112 1st/2nd paragraph, and any objections set forth in this Office action.

22. The following is a statement of reasons for the indication of allowable subject matter:

22.1 Claim 105 recites features that are novel of the art of record. Specifically, the art of record does not expressly or render obvious the Configurator. The Configurator is clearly, deliberately, and precisely defined within the Annex of the Specification (in accordance with MPEP 2111.01.IV). Specifically, the art of record does not disclose a Configurator as disclosed which includes in combination with the features in claim 105.




```
    "XACTOR"  =>
    { "ReqModule" => { "fbus_p" => "fbus_port.v",
                     },

      "Connect"      => { "FBUSA"  => [\&subst_infix,
["in(.*)", "aa_con"], ["out(.*)", "bb_con"],],
                     },

      "SelfConnect" => { "FBUSA"  => [\&subst_infix,
["out(.*)", "aa_con"], ["in(.*)", "bb_con"],],
                     },
      "Port"     => { FBUSA => [FBUS_p, fbus_p, 0], },
      "genDest" => \&genDest,
      "SysConn" => { FBUS_p => \@std_glob_con,
                   },
      "CfgCpp"  => [CPU_Xactor, [ ['Src', [FBUS_p ,
FBUS_type, Fbus_hwif], [FBUS] ] ] ],

    },
    "MONITOR"  =>
    { "ReqModule" => { "fbus_p" => "fbus_port.v",
                     },

      "Connect"      => { "FBUS"  => [\&subst_infix,
["in(.*)", "aa_con"], ["out(.*)", "bb_con"],],
                     },
      "SelfConnect" => { "FBUS"  => [\&subst_infix,
["out(.*)", "aa_con"], ["in(.*)", "bb_con"],],
                     },
      "Port"     => { FBUS => [FBUS_p, fbus_p, 0], },
      "genDest" => \&genDest,
      "SysConn" => { FBUS_p => \@std_glob_con,
                   },
      "ProbeConnect" => { FBUS => Fbus_hwif,
                     },
```

```
    ######
    "BRIDGE" =>
    ######
    {
      "MatchExpr" => "^(BRIDGE)(?:_[0-1])\$" ,
      "ExtrExpr"  => "^BRIDGE_([0-1])\$" ,
      ####
      "DUT"  =>
      { "ReqModule" => {"bridge" => "bridge_x.v",
              },
        "Connect" => { FBUS => [\&subst_infix,  ["(XX.*)",
""],],
                CMEM => [\&subst_infix,  ["(YY.*)", ""],],
                CIO  => [\&subst_infix,  ["(ZZ.*)", ""],],
            },

        "Port"    => {  FBUS => [BRD, bridge, 0],
                  CMEM => [BRD, bridge, 1],
                  CIO  => [BRD, bridge, 2],
              },

        "genDest" =>  \&genDest,
        "SysConn" => { BRD => [\&getSpecSysInst, "E",
[\&subst_infix,  ["(.*)", ""],],],
              },
        "CfgCpp"  => [Bridge_Dut, [ ['Own', [BRD, DUT, ],
['None'], ],
                        ],
                ],
      },
      ####
      "DUT_CORE"  =>
      { "ReqModule" => {"bridge_core" => "bridge_core.v",
              },
        "Connect" => { FBUSA => [\&subst_infix,  ["(XX.*)",
""],["in(.*)", "aa_con"], ["out(.*)", "bb_con"],],
                CMEM  => [\&subst_infix,  ["(YY.*)", ""],],
                CIO   => [\&subst_infix,  ["(ZZ.*)", ""],],
            },

       "SelfConnect" => { "FBUSA"  => [\&subst_infix,
["out(.*)", "aa_con"], ["in(.*)", "bb_con"],],
                        ],

        "Port"    => {  FBUSA => [BRD, bridge_core, 0],
```

(page 45-46 of Specification/Annex)

## ***Conclusion***

23. All claims are rejected.

24. The Instant Application is not currently in condition for allowance.

25. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing

date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Silver whose telephone number is (571) 272-8634. The examiner can normally be reached on Monday thru Friday, 10am to 6:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached on 571-272-2279. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Silver
Patent Examiner
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